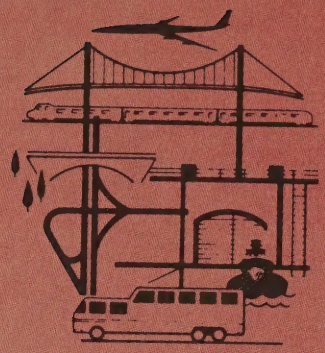
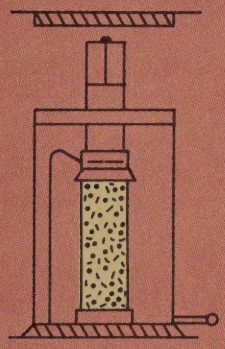
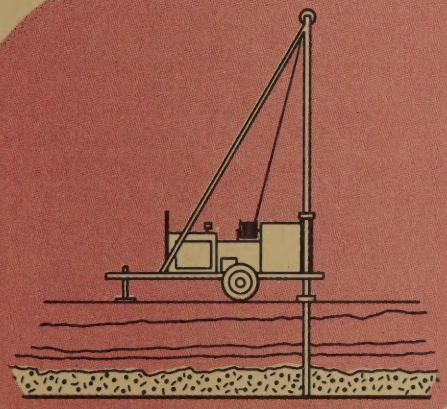
STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

RAYMOND T. SCHULER, COMMISSIONER

SOIL MECHANICS BUREAU







TEST WELL REPORT
CONTRACT FILD 74-10
I-88-1;OTSEGO CO.
SCHENEVUS-WORCESTER
P.I.N. 9357.11-111

February 1975

SM 238b (1/73)

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

ATE February 20, 1975

UBJECT FILD 74-10, TEST WELLS: I-88-1, SCHENEVUS-WORCESTER
OTSEGO COUNTY, P.I.N. 9357.11-111
TRANSMITTAL OF WATER QUALITY TEST RESULTS

ROM L. H. Moore, Director, Soil Mechanics Bureau, Room 102, Bldg. 7
By: E. M. Moody *Edward M. Moody*

TO R. H. Edwards, Facilities Design Subdivision, Room 404, Bldg. 5
Attn: J. J. Ryan

CC J. K. Connors, Regional Director, Region 9

Attached is a memorandum prepared by Mr. Alex Yatsevitch, Senior Engineering Geologist, containing his observations during the progression of the test wells on the above contract. The water quality test results on samples taken from each well at the conclusion of each pumping test are also attached.

EMM:RGS:SAS
Encl.

NYSDOT
Library
50 Wolf Road, POD 34
Albany, New York 12232

MEMORANDUM
DEPARTMENT OF TRANSPORTATION

DATE February 20, 1975

SUBJECT FILD 74-10
TEST WELLS: I-88-1
SCHENEVUS-WORCESTER
OTSEGO COUNTY, PIN 9357.11-111

FROM A. Yatsevitch, Senior Engineering Geologist

TO E. M. Moody, Associate Soils Engineer

Two six inch diameter test wells were drilled at this proposed rest area site by the Tully Drilling Co., Inc., of Poyntelle, Pa., under the supervision of Mr. Robert Pierce, E.I.C., to whom Engineering Geologists of this Bureau provided technical geologic assistance.

The first well to be drilled, Well No. 2 as indicated on the plans, was started on December 4, 1974 and on December 5, 1974 was progressed to approximately 64 feet. The overburden consisted of a sequence of sands, gravels and till with an estimated total potential yield of approximately 2 GPM. No indication of water was present at the till-bedrock interface. Subsequently, it was decided that development of the overburden would not be sufficiently productive and the casing was seated into the rock to 68 feet and the well advanced into the rock. The bedrock, a sequence of black shales and "dirty"sandstone yielded indications of water at three horizons. The most productive zone yielding an estimated 14 GPM at 215 feet raised the combined total yield of the bedrock in this well to approximately 17 GPM and the hole was terminated at a total depth of 220 feet. The well was developed by air from the rotary drilling rig, followed by disinfection and pumping prior to the step drawdown test initiated on December 9, 1974.

On December 6, 1974 the drilling rig was moved to the second location, Well No. 1 as indicated on the plans, and that hole initiated. The overburden, to a depth of 66 feet at which bedrock was encountered, consisted of a sequence of gravel, much silt, fine sand and medium to fine sand just above the bedrock. This last sand layer was the only overburden indicating presence of water. Potential yield was estimated at approximately 2 GPM and it was decided to progress the hole into the bedrock. The casing was driven to approximately 70 feet and drilling continued. The bedrock in this hole is generally similar in type and characteristics to that of the previous hole with the notable exception that only two

relatively minor water bearing zones were encountered - one at 71 feet and another at 190 feet. The combined yield as estimated at 220 feet was approximately 5 GPM. Drilling was continued in anticipation of a greater yield but was terminated at 260 feet with no additional water zones being encountered. The well was developed by compressed air from the drilling rig and disinfected prior to the step drawdown test.

Copies of the driller's logs and results of step drawdown tests for both wells are attached.

Samples of water were taken from each well at the conclusion of each pumping test and submitted to the New York State Department of Health, Division of Laboratories and Research at 99 Central Avenue, Albany, for water quality analysis on December 12, 1974. Unfortunately, the laboratory was in the process of moving and reorganizing at that time and for various reasons the water quality analyses were not completed and released until February 13, 1975. The results of the water quality analyses are attached.

Tamper-proof caps were installed on the well casing pending receipt of water quality analyses and future utilization of the wells.

AY:BR
Attachments

TULLY DRILLING COMPANY, INC.

Poyntelle, Pa.

LOG OF WELL

Well No.

Well for New York State Dept. of Transportation Test No. 1

Address Region No 9 Binghamton N.Y.

Located at Route 88, Northbound in Otsego County, State of N.Y.

Drilling started December 9, 1974 Date Test Hole Completed December 9, 1974

Total depth to bottom of Well 270' Diameter Test Hole 6"

Stands when not pumping _____ feet _____ inches from the surface of the ground

Thickness of Stratum	Depth To Bottom of Strata	Formation Found Each Stratum	Thickness of Stratum	Depth To Bottom of Strata	Formation Found Each Stratum
6	0'-66'	Overburden-Sand with small			
		amounts of Gravel Mixed			
7'		6" Well Casing left in place			
4'	66'-270'	Layered Gray Shale and Sandstone			
		Water Veins			
		2 GPM at 71'			
		4 G.P.M at 190'			

Test opinion of Test

Well Developed by air from Drill to yield 6 G.P.M

Leo J. Kay

Driller

KEY TYPE OF USED

Reverse
Rotary ✓
Cable Tool
Wash
Other?

7-10; PIN [illegible]111
WELLS: I-88-1; OTSEGO CO. RA8
VUS-WORCESTER
TULLY DRILLING COMPANY

Phone: PLEASANT MOUNT 448-3658

TULLY DRILLING Co., Inc.

POYNTELLE, Pa. 18453

H-4

State of New York Dept. of Transportation
Contract No. FILD74-10 HC 89507
Well # 1 Pump Test ← THIS IS WELL No. 1 ON THE PLANS.

Time	G.P.M.	Water Level	Drawdown	Water
6:30A.M. To 8:00A.M.		Circulating Water		
8:00A.M.	3	34'0		Cloudy
8:15 "	4	36'0	2'	"
8:30	5	38'0	4'	"
8:45	5	43'5"	8'5"	"
9:00	6	46'6"	11'6"	"
9:15	5	46'6"	11'6"	"
9:30	5	46'6"	11'6"	"
10:00	5	48'2"	14'2"	"
10:30	5	48'2"	14'2"	"
11:00	5	48'2"	14'2"	"
11:30	5	48'8"	14'8"	"
12:00 Noon	5	48'8"	14'8"	"
12:30P.M.	5	48'8"	14'8"	"
1:00	5	48'1"	14'1"	"
1:30	5	48'1"	14'1"	"
2:00	5	48'1"	14'1"	"
2:30	5	48'1"	14'1"	"
3:00	5	48'1"	14'1"	"
3:30	5	48'6"	14'6"	"
4:30	5	51'3"	17'3"	"
5:30	5	52'6"	18'6"	Clear
6:30	5	52'6"	18'6"	"
7:30	5	52'6"	18'6"	"
8:30	5	52'6"	18'6"	"
9:30	5	52'6"	18'6"	"

. PUMP SET AT 260' FOR TEST. H-4.

074-10; PIN 0557.11.111
ST WELLS: I-88-1; OTSEGO CO. RAB
GENEVUS-WORCESTER
CNTR: TULLY DRILLING COMPANY

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

LF ACCESSION NO: 08717 YR/MO/DAY/HR SAMPLE REC'D: 74/12/11/13

REPORTING LAB: 01 CENTRAL AVE. LAB
PROGRAM: 820 NYS DEPT. OF TRANSP.
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SUBW'SHED: WORCESTER

EXACT SAMPLING POINT: TEST WELL #1 PIN 9357.11
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 12/10/06
REPORT SENT TO: CO (2) RO (0) LPHE (0) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
00800	STANDARD PLATE COUNT 48 HR		1.	LT
07000	COLIFORM BACT MF COL/100ML		1.	LT

DATE COMPLETED: 12/16/74

DEPUTY CHIEF ENGINEER, TECHNICAL SERVICES
NYS DEPT. OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

SUBMITTED BY: HUFFMAN

ATT: WM. P. HOFFMAN

Recd. 12/17/74 FJ.

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

A ACCESSION NO: 06787 YR/MO/DAY/HR SAMPLE REC'D: 74/12/12/11

REPORTING LAB: 10 GRIFFIN LAB
PROGRAM: 820 NYS DEPT. OF TRANSP.
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: WORCESTER

EXACT SAMPLING POINT: TEST WELL NO 1 PIN 9357.11
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
DAY/HR OF SAMPLING: FROM 00/00 TO 12/10/06
REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
00200	TURBIDITY, J.T.U.		36.	
00300	ODOR, HOT		1.004	
00501	NITROGEN,AMMONIA AS N	MG/L	0.02	
00709	NITROGEN,NITRITE AS N	MCG/L	4.	
00801	NITROGEN,NITRATE AS N	MG/L	1.6	
01001	CHLORIDES	MG/L	4.	
01101	HARDNESS, TOTAL AS CACO3	MG/L	43.	
01501	ALKALINITY, MTH OR AS CACO3	MG/L	24.	
03000	PH (LABORATORY)		6.7	
04001	NITROGEN,KJELDAHL,INCL. AMM	MG/L	1.9	
06501	CHEMICAL OXYGEN DEMAND	MG/L	4.	LT
10001	IRON	MG/L	0.08	

DATE COMPLETED: 2/13/75

DEPUTY CHIEF ENGINEER,TECHNICAL SERVICES
NYS DEPT.OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

ATTENTION OF: HOFFMAN

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 2 OF 2)

ACCESSION NO: 06787 YR/MO/DAY/HR SAMPLE RECD: 74/12/12/1

REPORTING LAB: 10 GRIFFIN LAB
PROGRAM: 820 NYS DEPT. OF TRANSP.
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURV'SHED: WORCESTER

EXACT SAMPLING POINT: TEST WELL NO 1 PIN 9357.11
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
PERIOD/HR OF SAMPLING: FROM 00/00 TO 12/10/06
REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
01	201 MANGANESE	MG/L	0.04	
01	701 SODIUM	MG/L	3.8	
00	300 ODOR, COLD		1.004A	
0	101 PHOSPHATES, TOTAL AS P	MG/L	0.08	
01	401 POTASSIUM	MG/L	1.2	
10	001 TOTAL DISSOLVED SOLIDS	MG/L	93.	
10	201 HARDNESS, CALCIUM AS CACO3	MG/L	28.	
00	100 COLOR (TRUE)		0.	

DATE COMPLETED: 2/13/75

RECEIVED
FEB 18 1975
SOIL MECHANICS BUREAU

DEPUTY CHIEF ENGINEER, TECHNICAL SERVICES
NYS DEPT. OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

ATTENTION OF: HOFFMAN

TULLY DRILLING COMPANY, INC.

Poyntelle, Pa.

LOG OF WELL

Well No.

W for New York State Dept. of Transportation Test No. 2

Address Region No 4, Binghamton, N.Y.

ca at Route 88, Northbound in Otsego County, State of NY

ill started December 4, 1974 Date Test Hole Completed December 6, 1974

Total depth to bottom of Well 220' Diameter Test Hole 6"

ta when not pumping _____ feet _____ inches from the surface of the ground

kn ra n	Depth To Bottom of Strata	Formation Found Each Stratum	Thickness of Stratum	Depth To Bottom of Strata	Formation Found Each Stratum
4	0'-64'	Overburden Sand and Gravel			
8'		6" Well Casing Left in Place			
6	64'-220'	Layered Gray Shale and Sandstone			
		Water Veins			
		2 G.P.M. at 71'			
		1 G.P.M at 170'			
		14 G.P.M at 215'			

s a opinion of Test

ell Developed by Air from Drill to Yield 17 G.P.M

CK YPE OF IG SED

Reverse
Rotary
Cable Tool
Wash
Other?

Leo J. Kay

Driller

ILD 74-10; [illegible].11.111
EST WELLS: I-33-1; OTSEGO CO. RAB
CHENEVUS-WORCESTER
ONTR: TULLY DRILLING COMPANY

State of New York Dept. of Transportation
Contract No. FILD 74-10 HC 89507
Well # 2 Pump Test ← THIS IS WELL NO. 2 ON THE PLANS

-274.

Time	G.P.M.	Water Level	Drawdown	Water
:30 A.M.-		Circulating Water		
1:30 A.M.				
1:30 A.M.-		Standing		
30 P.M.				
:30 P.M.	5	34' 4"	1' 4"	Cloudy
:45	5	37' 2"	4' 2"	"
:00	5	37' 2"	4' 2"	"
:20	5	37' 4"	4' 4"	"
:30	5	37' 4"	4' 4"	"
:40	8	40' 2"	7' 2"	Clear
:55	8	40' 2"	7' 2"	"
:10	8	41' 3"	8' 3"	"
:25	8	41' 3"	8' 3"	"
:35	11	45'	12'	"
:50	11	45'	12'	"
:00	13	45'	12'	"
:15	13	45'	12'	"
:30	15	45'	12'	"
:45	15	45'	12'	"
:00	15	45'	12'	"
:30	12	45'	12'	"
:00	12	45'	12'	"
:30	12	45'	12'	"
:00	12	44'	11'	"
:30	12	42' 6"	9' 6"	"
:00	12	42' 6"	9' 6"	"
:30	12	43'	10'	"
:00	12	43' 6"	10' 6"	"
:30	12	44'	11'	"
10:00	12	44'	11'	"
10:30	12	44' 6"	11' 6"	"
11:00	12	45'	12'	"
12:00	12	45'	12'	"
:00 A.M.	12	45' 6"	12' 6"	"
:00	12	45' 6"	12' 6"	"
:00	12	46'	13'	"
:00	12	46'	13'	"
:00	12	46'	13'	"

* PUMP SET AT 200' FOR TEST. -274.

IL 74-10; PIN 9357.11.111 ~ RAB
ES WELLS: I-88-1; OTSEGO CO.
NEVUS-WORCESTER
R: TULLY DRILLING COMPANY

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 1)

ACCESSION NO: 08718 YR/MO/DAY/HR SAMPLE RECVD: 74/12/11/12

RTING LAB: 01 CENTRAL AVE. LAB
RAM: 820 NYS DEPT. OF TRANSP.
ICN (SOURCE) NO:
NAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
DINATES: DEG ' "N, DEG ' "W
ON NAME INCL SUBW'SHED: T. WORCESTER

T SAMPLING POINT: TEST WELL NO.2 PIN 9357.11
OF SAMPLE: 12 WATER, DRILLED WELL
AY/HR OF SAMPLING: FROM 00/00 TO 12/10/05
RT SENT TO: CO (2) RO (0) LPHE (0) LHO (0) FED (0) CHEM (0)

	PARAMETER	UNIT	RESULT	NOTATION
2	00 STANDARD PLATE COUNT 48 HR		1.	LT
2	00 COLIFORM BACT MF COL/100ML		1.	LT

COMPLETED: 12/16/74

DEPUTY CHIEF ENGINEER, TECHNICAL SERVICES
NYS DEPT. OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

SUBMITTED BY: HUFFMANN

Recd. 2/17/75 J.Y.

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

RESULTS OF EXAMINATION
(PAGE 1 OF 2)

L: ACCESSION NO: 06786 YR/MO/DAY/HR SAMPLE REC'D: 74/12/12/1;

REPORTING LAB: 10 GRIFFIN LAB
PROGRAM: 820 NYS DEPT. OF TRANSP.
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: WORCESTER

EXACT SAMPLING POINT: TEST WELL NO 2 PIN 9357.11
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
M/DAY/HR OF SAMPLING: FROM 00/00 TO 12/10/05
REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0,

	PARAMETER	UNIT	RESULT	NOTATION
00100	COLOR (APPARENT)		17.	
00200	TURBIDITY, J.T.U.		8.8	
00300	ODOR, HOT		2.002A	
00501	NITROGEN,AMMONIA AS N	MG/L	0.02	
00709	NITROGEN,NITRITE AS N	MCG/L	2.	
00801	NITROGEN,NITRATE AS N	MG/L	1.6	
01001	CHLORIDES	MG/L	6.	
01101	HARDNESS, TOTAL AS CACO3	MG/L	39.	
01501	ALKALINITY, MTH OR AS CACO3	MG/L	23.	
01900	PH (LABORATORY)		6.6	
00401	NITROGEN,KJELDAHL,INCL. AMM	MG/L	1.4	
00501	CHEMICAL OXYGEN DEMAND	MG/L	4.	
01001	IRON	MG/L	0.14	

DATE COMPLETED: 2/13/75

DEPUTY CHIEF ENGINEER,TECHNICAL SERVICES
NYS DEPT.OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

ATTENTION OF: HOFFMAN

NEW YORK STATE DEPARTMENT OF HEALTH
DIVISION OF LABORATORIES AND RESEARCH
ENVIRONMENTAL HEALTH CENTER

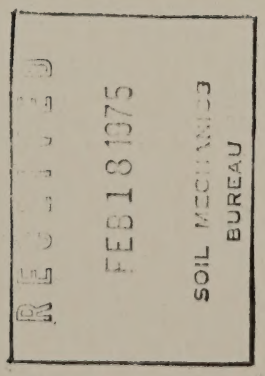
RESULTS OF EXAMINATION
(PAGE 2 OF 2)

LAB ACCESSION NO: 06786 YR/MO/DAY/HR SAMPLE REC'D: 74/12/12/11

REPORTING LAB: 10 GRIFFIN LAB
PROGRAM: 820 NYS DEPT. OF TRANSP.
STATION (SOURCE) NO:
DRAINAGE BASIN: 06 NY GAZETTEER NO: 3873 COUNTY: OTSEGO
COORDINATES: DEG ' "N, DEG ' "W
COMMON NAME INCL SURW'SHED: WORCESTER

EXACT SAMPLING POINT: TEST WELL NO 2 PIN 9357.11
TYPE OF SAMPLE: 12 WATER, DRILLED WELL
MO/DAY/HR OF SAMPLING: FROM 00/00 TO 12/10/05
REPORT SENT TO: CO (1) RO (0) LPHE (1) LHO (0) FED (0) CHEM (0)

PARAMETER		UNIT	RESULT	NOTATION
00201	MANGANESE	MG/L	0.02	LT
00701	SODIUM	MG/L	4.1	
00300	ODOR, COLD		2.00?0	
00710	PHOSPHATES, TOTAL AS P	MG/L	0.03	
00401	POTASSIUM	MG/L	0.7	
00200	TOTAL DISSOLVED SOLIDS	MG/L		SR
00120	HARDNESS, CALCIUM AS CACO3	MG/L	35.	



DATE COMPLETED: 2/13/75

DEPUTY CHIEF ENGINEER, TECHNICAL SERVICES
NYS DEPT. OF TRANSPORTATION, BLDG. 7A
1220 WASHINGTON AVENUE
ALBANY, N.Y. 12226

ATTENTION OF: HOFFMAN

01043
LRI